

REMARKS

Claims 1, 5-8 and 10-15 are pending in the present application. Claim 1 is in independent form. Claim 1 is amended. In view of the above amendments and the following remarks, favorable reconsideration and allowance of the present application is respectfully requested.

I. **CLAIM AMENDMENTS**

By the present Amendment, claim 1 is amended. The amendments to claim 1 are supported, at least, by paragraph [0029] of the original Specification. In particular, paragraph [0029] states that “[a]fter layer production and subsequent thermal crosslinking or photocrosslinking, a water-swellaable hydrogel is obtained...” Thus, Applicants submit that the hydrogel is internally cross-linked.

Entry of this amendment is proper under 37 CFR §1.116 since the amendments: (a) place the application in condition for allowance for the reasons discussed herein; (b) do not raise any new issues requiring further search and/or consideration since the amendments amplify issues previously discussed throughout prosecution (see pages 3 and 8 of the Action); (c) do not present any additional claims without canceling a corresponding number of finally rejected claims; and (d) place the application in better form for appeal, should an appeal be necessary.

Entry of the amendments is thus respectfully requested.

II. CITED ART REJECTIONS

(A) *Claims 1, 5, 6, 8 and 10-15 stand rejected under 35 U.S.C. §103(a) as allegedly being anticipated by Albers et al. (hereinafter "Albers"), WO 00/62048 to in view of Johnson et al. (hereinafter "Johnson"), U.S. Patent No. 6,372,813 B1. Applicants respectfully traverse the rejection.*

i. INDEPENDENT CLAIM 1

Amended independent claim 1 is directed to a DNA chip including (*inter alia*) "the hydrophilic reaction layer being a hydrogel internally cross-linked by a cross-linking agent." Applicants submit that the combination of Albers and Johnson fails to explicitly teach, or otherwise suggest, the above features recited in amended independent claim 1.

a. THE COMBINATION OF ALBERS AND JOHNSON

The rejection states that "Albers et al do not teach hydrogel includes a crosslinking agent." Action, p. 3. The rejection further states that Johnson "...teaches that the hydrogel includes a cross linking agent (column 10, lines 15-23 and column 13, lines 64-67." Action, p. 8.

Johnson states that,

A reactive site according to the invention also optionally can function as a crosslinker or crosslinking group when applied in the polymer hydrogel and/or polymer hydrogel array according to the invention. A 'crosslinker' or 'crosslinking group' is a chemical entity that serves to covalently link at least two target agents (i.e., the functional groups being connected to the crosslinker or crosslinking group). Such crosslinkers and crosslinking agents to be added can be obtained from a variety of commercial suppliers (e.g., Molecular Probes, Eugene, Oregon; as well as a variety of others) and moreover, can be

chemically synthesized using techniques known to those skilled in the art. Optionally an exogenous crosslinker can be added to enhance the efficiency of crosslinking or improve the properties of the hydrogel. **Such added crosslinker is not needed, however, to effect crosslinking and/or attachment of biomolecules, but merely is an optional addition.**

Johnson, col. 10, ll. 12-28 (emphasis added).

The optional crosslinkers discussed in the above passage assist the reactive site with attachment of the biomolecules. Johnson fails to teach, or suggest, that the polymer hydrogel is “internally cross-linked” (as recited in claim 1) by the crosslinker.

For at least these reasons, Applicants submit that Albers in view of Johnson fails to explicitly teach, or otherwise suggest, a DNA chip including “the hydrophilic reaction layer being a hydrogel internally cross-linked by a cross-linking agent” as recited in amended independent claim 1.

Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the rejection to independent claim 1, and claims 5, 6, 8 and 10-15 at least by virtue of their dependency on independent claim 1.

(B) Claims 1 and 7 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Albers in view of Johnson and further in view of Valint, Jr. et al. (hereinafter “Valint”), U.S. Publication No. 2002/0102415 A1. Applicants respectfully traverse the rejection.

Applicants submit that Albers directed to an electric sensor array. Johnson is directed to the immobilization of biomolecules (e.g., DNA, RNA,

peptides and proteins), which are used in molecular biology research, to a solid support or matrix. Valint is directed an optically clear, hydrophilic coating upon the surface of a silicon medical device, such as a contact lenses. Thus, Albers, Johnson and Valint are directed to non-analogous art.

Therefore, even assuming *arguendo* that Valint taught a hydrophilic reaction layer “being a hydrogel internally cross-linked by a cross-linking agent” as recited in amended independent claim 1, Applicants submit that one of ordinary skill in the art would not look to Valint to teach the deficiencies of Albers and Johnson.

For at least this reason, Valint fails to remedy all of the deficiencies of Albers and Johnson with respect to independent claim 1. As such, claim 7, at least by virtue of its dependency on independent claim 1, is patentable over the combination of Albers, Johnson and Valint.

Thus, Applicants respectfully request that the Examiner reconsider and withdraw the §103(a) rejection to claims 1 and 7.

III. PROVISIONAL DOUBLE PATENTING REJECTIONS

(A) *Claims 1, 5-8 and 10-15 stand rejected on the ground of nonstatutory obviousness-type double patenting as allegedly being unpatentable over claims 1-18 of U.S. Patent No. 7,572,624 in view of Johnson and Valint.*

By the present Amendment, Applicants have filed a terminal disclaimer disclaiming the terminal part of any patent granted in the present application which would extend beyond the expiration of U.S. Patent No. 7,572,624.

Thus, Applicants submit that the rejection has been overcome. Accordingly, withdrawal of the double patenting rejection is respectfully requested.

(B) Claims 1, 5-8 and 10-15 stand rejected on the ground of nonstatutory obviousness-type double patenting as allegedly being unpatentable over claims 11-15 and 19 of co-pending U.S. Application No. 10/539,437 (now U.S. Patent No. 7,642,053 in view of Albers and Johnson and further in view of Valint. Applicants respectfully traverse the rejection.

Applicants submit that claims 11-15 and 19 of U.S. Application No. 10/539,437 were cancelled prior to issuance of the respective patent, U.S. Patent No. 10/539,437. Thus, U.S. Patent No. 7,642,053, which results from U.S. Application No. 10/539, 437, does not include the subject matter of claims 11-15 and 19.

Therefore, Applicants submit that the rejection has been rendered moot. Accordingly, withdrawal of the double patenting rejection is respectfully requested.

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CONCLUSION

Accordingly, in view of the above, reconsideration of the rejections and allowance of each of claims 1, 5-8 and 10-15 in connection with the present application is earnestly solicited.


Should there be any matters that need to be resolved in the present application; the Examiner is respectfully requested to contact the undersigned at the telephone number below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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By


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Attachments: Terminal Disclaimer